

REMARKS

Claims 1-12 are pending in the Application. Claims 1-12 currently stand rejected. Claims 1-12 are objected to because of informalities. Reconsideration of the Application in view of the following remarks is respectfully requested.

Claim Objections

In paragraph 1 the Examiner objects to claims 1-12 for use of the terminology “between each of the plurality of electrodes.” As far as understood, the Examiner states the word “between” requires “at least two things.” The Examiner further appears to be stating that the word “each” means one thing, not “two things.” The Merriam-Webster Dictionary provides a definition of the word “each” as: “being one of two or more distinct individuals having a similar relation and often constituting an aggregate.” In view of this definition of the word “each,” and before attempting to amend the claims, Applicants respectfully request further clarification from the Examiner as to what in particular the Examiner believes is wrong with the claimed terminology “between each.”

35 U.S.C. §103

In paragraph 3 of the Office Action, the Examiner rejects claims 1-12 under 35 U.S.C. § 103 as being unpatentable over USPN 6,222,720 (hereafter Aoki) in view over USPN 6,198,623 (hereafter Amatucci).

Regarding independent claims 1 and 9, in paragraph 3, the Examiner states that Aoki “does not disclose expressly the coating is formed by a secondary

coating formed on a primary coating including conducting carbon powder and a binder.” Applicants concur.

As cited by the Examiner in paragraph 3, Aoki in column 13, lines 14-50 discusses direct coating of a collector plate using a slurry fabricated from four (4) components: activated carbon, conductive carbon, binder, and solvent. Not only does the coating of Aoki differ in composition from Applicants’ claimed secondary coating of activated carbon, solvent, and binder, Aoki also does not disclose that the slurry is adhered to collector 72, 73 by an intermediate primary coating as is taught by the present invention.

In paragraph 3, the Examiner states “the missing limitation is well know in the art because Amatucci discloses this feature (See Example 1) ... a person of ordinary skill is motivated to modify Aoki with Amatucci to obtain increased specific capacity.” As discussed in the Abstract and Specification of Amatucci, an electrode product is fabricated using an activated carbon fabric 13, 17 and membrane of microporous fibrillar ultra-high capacity molecular weight polyethylene separator 15. Using a sprayed coating of conductive carbon and binder, the electrode product is laminated onto a collector foil 11. As further disclosed in the Abstract, the laminar structure of the separator membrane material enables direct application of cell lamination temperatures without resulting collapse of separator microporosity and attendant losses of essential electrolyte retention and conductivity ...[t]he superior functional materials enable the fabrication of flexible, self supporting cell structures which yield specific energy capacity and increased voltage output for utilization demands.

As far as the Abstract of Amatucci can be used as support for the broad motivating statement made by the Examiner, an increased capacity is not provided by just the cited conductive adhesive coating of Example 1, but by a combination of the separator 15, the carbon fabric electrode 13, and the conductive adhesive coating. In Amatucci, the conductive adhesive coating of Example 1 provides not only adhesion, but also a conductive path between an adhered carbon fabric electrode 13 and a bare collector foil 11 (by means of conductive carbon), without which adequate conductive contact between the fabric electrode and the collector would be very difficult if not impossible to achieve.

In contrast to Amatucci, Aoki in column 13, lines 45-50, describes that when made as a slurry, coated electrode layers 31b, 31c, 32b, 32c of the slurry are directly applied onto collecting materials 31a, 32a. Aoki thus teaches that when fabricating coated electrode layers 31b, 31c, 32b, 32c, an intermediate conductive adhesive layer is not used or needed to bond the layers to the collecting materials 31a, 32a, as contrasted to Amatucci, which does require the use of an intermediate conductive adhesive layer. An intermediate conductive adhesive layer is not used by Aoki, because such conductive and adhesive functionality is provided by the properties inherent in the coating process and the conductive carbon material used therewith. Thus, the Examiner's suggestion to modify Aoki using Amatucci conflicts with the teachings of Aoki, as Aoki does not require an intermediate adhesive layer when a coating comprising conductive and adhesive functionality is used. In addition, if modified in the manner suggested

by the Examiner, the coated product of Aoki would be degraded in performance by virtue of the added resistance of an unneeded added intermediate layer.

With regard to Claim 1, Applicants claim a two layer coating method with "... electrodes comprising: a current collector plate ... a primary coating carbon formed on a portion of each side of the current collector plate ... a secondary coating formed on each primary coating." In particular, the secondary coating includes "activated carbon powder, a solvent, and a binder." As claimed, conductive carbon is not an element of the secondary coating.

Assuming arguendo that Aoki could be modified by the teachings of Amatucci, the resultant product would comprise a primary coating of conductive carbon and binder, and a secondary coating of activated carbon, binder, solvent, and conductive carbon. The teaching of Aoki in view of Amatucci, therefore does not anticipate Applicants' claimed invention. In the instant case, Applicants' claimed invention does not claim conductive carbon. Without conductive carbon in the coating of Aoki, Aoki would exhibit a greatly increased resistance and would not function properly.

Regarding claims 2-8 and 10-12, for at least the reasons that claims 2-8 and 10-12 depend from independent claims 1 or 9, and because claims 1 and 9 are not taught by Aoki in view of Amatucci, per the response above, Applicants respectfully traverse the Examiner's rejections of claims 2-8 and 10-12.

The burden is on the Examiner to establish a prima case of obviousness under 35 U.S.C. § 103(a). As per MPEP § 2142, "... the prior art reference (or references when combined) must teach or suggest all the claim limitations."

For at least the reasons stated above, the Examiner has failed to make a *prima facie* case of obviousness under 35 U.S.C. § 103(a) as set forth in MPEP § 2142, and Applicants therefore respectfully request reconsideration and withdrawal of the objections and rejections of claims 1-12.

Summary

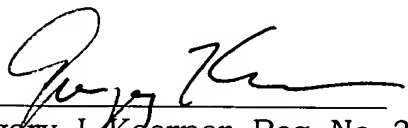
Applicants submit that the foregoing remarks overcome the Examiner's rejections under 35 U.S.C. § 103(a). Because the cited references and the Examiner's citations thereto do not teach or suggest the claimed invention, and in light of the differences between the claimed invention and the cited prior art, Applicants therefore submit that the claimed invention is patentable over the cited art, and respectfully request the Examiner to allow claims 1-12 so that the Application may issue in a timely manner. If there are any questions concerning this amendment, the Examiner is invited to contact the Applicants' undersigned representative at the number provided below.

Respectfully submitted,

Date: _____

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By: _____


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